9. Melanie

Program Name: Melanie.java **Input File: melanie.dat**

An anagram is a reordering of the letters in a word of phrase. For example, you can rearrange the letters of `stressed` to get the word `desserts`. You can even make `detesssr` and `tsesrsed`, which are both anagrams of `stressed` even if they are not legitimate English words. Melanie would like to write a program, that given a word, not necessarily a legitimate English word, that will output the number of possible unique anagrams that can be formed from the given word.

Input: Input begins with an integer N (1 <= N <= 10), the number of different test cases. Each of the following N test cases will contain a word (not necessarily a legitimate English word) made up of letters only. The letters may be upper or lower case, and upper and lower cases letters are to be treated as distinct letters. The word will have a length of at least 1 and no more than 20.

Exact Output: For each test case you are to output the total possible unique anagrams that can be made from the given word. Each anagram must use every letter, i.e., letters cannot be omitted to make a shorter word.

Sample Input:

```
7
abc
att
aabbcc
ordeals
abcdABCDabcd
desserts
terraced
```

Sample Output:

```
6
3
90
5040
29937600
3360
10080
```